

Local Participation Drives Montana's Interoperability Solutions

Faced with more than 550 miles of Canadian border, rugged topography, and remote facilities, Montana's emergency responders are well-versed in the necessities and challenges of interoperable communications. Montana's efforts to improve statewide interoperability gained momentum after September 11, 2001, when the state replaced topdown projects with a locally driven initiative known as the Interoperability Montana (IM) Project.

What began as a partnership between local agencies has grown into 9 consortia composed of representatives from Montana's 56 counties and 7 Native-American Nations. Consortium members elect project directors, who represent each consortium on the IM Project Directors Board. Federal and state partners, such as the State Interoperability Executive Council and the Public Safety Services Bureau, provide input and support to the project directors, who retain voting powers.

"Radio waves have no political boundaries, and working within the consortia system also helps to erase boundaries," says Scott Bradford, Communications Technology Manager for the state. "When you're as big as we are with so few people, you learn that you sometimes need to call on your neighbors for help. We're trying to do this together so we don't end up with separate systems that work okay on their own, but don't work together."

IM is committed to working in partnership with local, county, tribal, state, and Federal agencies to serve the state's critical emergency response needs. The project's bottom-up approach gains from the valuable input of Montana's emergency responders, including law enforcement, firefighters, emergency medical services, and personnel from other agencies that frequently rely on radio communications. According to Bradford, since most residents maintain an independent, "frontier" attitude, preferring to do things on their own rather than rely on government agencies, this approach has worked well.

"This is really a cooperative effort," says Bradford. "We said, 'Put your needs on the table, bring your assets, and we'll work with you to help you build

the system.' Agencies have worked with each other to combine resources to their mutual benefit, with strategies that include a variation of the old-fashioned barter system."

Driven by practitioner needs, IM aims to:

- Improve communication capabilities.
- Create the highest level of interoperability possible.
- Integrate local, tribal, and state efforts.

Concept Demonstration Projects

Central to IM's strategy are two Concept Demonstration Projects (CDPs)—the Southwest Interoperability Project, also known as CDP I, and the Northern Tier Interoperability Project, also known as CDP II. These projects aim to interconnect standards-based systems to maximize existing resources and enhance communication capacities for communities across the state.

Based on demonstration project results, the consortia comprising the IM project will develop a state-wide implementation plan using a phased approach.

CDP I

IM's CDP I focuses on Lewis and Clark County, which is larger than the state of Rhode Island and home to the state's capital, Helena. Interoperable communications are critical to the area, where local, tribal, state, and Federal agencies routinely coordinate to serve the region. Available funding from an existing mill levy and a grant package made the region a viable starting point.

To serve the region's complex interoperability needs, the CDP I system is designed to:

- Work in a large geographic area; the coverage area extends beyond Lewis and Clark County into parts of three other consortia.
- Combine Project 25 (P25) trunked and P25 digital/analog conventional capability.
- Allow communication between P25 narrowband digital trunked and existing conventional users.
- Use frequency in the VHF band and a digital microwave backbone.
- Provide advanced channel management for shared use of frequencies and seamless roaming throughout the trunked areas.
- Enhance responder safety through use of embedded signaling.
- Use current mutual aid channels.
- Incorporate backward compatibility with existing systems.

The CDP I system continues to evolve through user feedback and input. The project began operations in 2005 and phased in user agencies through summer 2006, when it became operational county-wide. The project remains under budget.

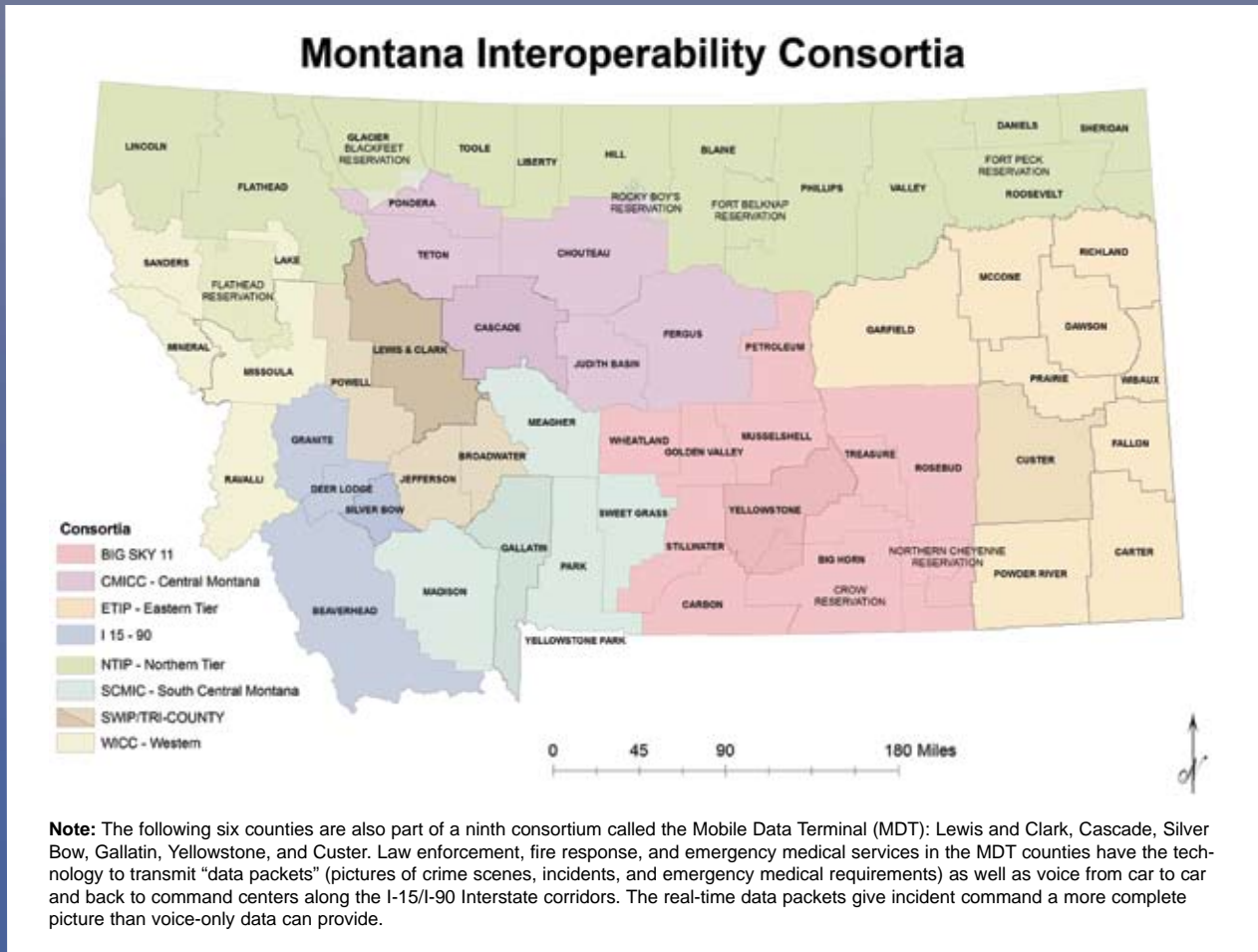
Chris Christenson, Chief of Montana's Public Safety Services Bureau, says existing sites will be upgraded and new ones added as funding becomes available: "An ideal goal would be to have the entire state operational in five years, but because of limited funding, that may not be possible."

Maximizing Funding and Existing Resources

In 1999, the budget of the Lewis and Clark County Sheriff's Office showed a deficit of \$500,000 in funds needed to maintain regular operations. The county formed a citizens' advisory group, which brought to light several problems, including a failing communications system. The advisory group recommended a ballot measure for an ongoing mill levy, part of which—\$125,000 annually—would be earmarked for communications. Seven years later, the levy continues.

The ongoing levy led to other forms of assistance, including a Federal Emergency Management Agency grant in 2002 and endorsement as a CDP by then-governor Judy Martz in the same year. Additional grant funding allowed the project to purchase radios for the Sheriff's Office, fire and rescue services, public works, the health department, and various other state agency offices. Consortia members learned about working with vendors and developed the concept of a hybrid VHF narrowband system that uses both conventional and digital radios. CDP I built repeater towers and assisted in arranging agreements between agencies to share existing sites and frequencies.

Although the region's emergency responders face radio equipment learning curves and ever-evolving



standard operating procedures, Lewis and Clark County Sheriff Cheryl Liedle notes the success of CDP I in increasing communications capacities across Lewis and Clark County. “I’ve been so deeply immersed in moving this project forward that I haven’t had a good chance to take a step back and really appreciate what we have accomplished in radio coverage alone,” says Liedle. “I can now talk to my deputy in Augusta from my office in Helena, which is 90 miles away over very rugged terrain, and the communication is crystal clear. That alone is something we’ve never been able to do before.”

IM leaders are leveraging the lessons learned and experience gained from the first phase of CDP I as the project advances into its second phase, which aims to link CDP I with CDP II.

CDP II

Effective communications are critical to local, tribal, state, and Federal emergency response agencies that work along Montana’s border with Canada. Unfortunately, emergency response agencies often have difficulty communicating across the northern region’s expansive, rugged terrain. A 2006 shooting incident underscored the region’s inadequate communications. County law enforcement responding to the incident could not effectively communicate with the U.S. Border Patrol.

“For the Northern Tier, this project represents a very essential service,” says Glacier County Sheriff Wayne Dusterhoff. “Right now, we have a lot of local emergencies to deal with, and when they happen, it’s hard to communicate. Our radio systems jam up and we’d be in real trouble if it weren’t for cell phones. It’s very crucial for us to complete this project.”

To address these communications issues, CDP II is building a radio tower network in the mountains that will provide connectivity to the Helena area and to state agencies. Dusterhoff expects the system to be operational by the end of 2006.

The initiative is not without challenges, including land ownership issues along with the mountainous topography. When CDP II needed to build radio towers in Lincoln County, home to Glacier National Park, the project had to identify sites that skirted the park’s borders.

CDP II leaders must also contend with limited funding to purchase radios for the emergency response agencies in the consortium. Although the sparsely populated consortia have fewer emergency responders to equip, they also have fewer funding resources.

“Funding is a very critical issue,” Dusterhoff says, adding that although the Northern Tier received some U.S. Department of Homeland Security grants after September 11, 2001, all of that funding went into building the tower system.

As a result, consortia members and their partners actively pursue any funding avenue that becomes available. They also barter services and expertise to

maximize limited funds. “For example, the Montana Highway Patrol is providing maintenance for digital microwaves in the Northern Tier project [CDP II],” Bradford says. “They don’t have a lot of cash to share, but they do have expertise in maintenance.”

According to Dusterhoff, CDP II leaders are addressing funding issues and other challenges one step at a time. “For us in the Northern Tier, we’re slowly moving ahead,” Dusterhoff says. “We just need to remember there are still 41 other counties that will need to be tied into the system, and that we have to figure out how that will happen.”

Commitment to Partnerships

IM’s locally driven approach and commitment to partnerships have proven invaluable to overcoming the challenges of instituting a communications system across a sprawling state. Examples of the important relationships forged are many. IM representatives point to state agencies’ management support for local consortia and to the personal support provided by Montana Governor Brian Schweitzer and Montana Chief Information Officer Dick Clark. For IM representatives and the state’s emergency responders, these partnerships are just as critical to advancing interoperability progress as the construction of radio towers and standardization of procedures.

“The network we built among ourselves is more valuable than any equipment we could possibly put on the mountaintops,” says Liedle. “It was a painful process that delved into a lot of issues, but it was more valuable than anything else we did. We came out of it working together, with a better understanding of each other’s problems.”

Montana Interoperability Project: Lessons Learned

- ◆ Emphasize a bottom-up approach.
- ◆ Involve stakeholders at the grassroots level.
- ◆ Encourage innovative thinking and cooperative efforts (for example, “bartering” maintenance for services).
- ◆ Work to “erase” political boundaries.
- ◆ Invite feedback and participation from neighboring states and territories.
- ◆ Provide encouragement and assistance from the top as needed and requested.

Baseline Survey Results Will Help Leaders Make Informed Decisions

Earlier this year, in an unprecedented analysis, SAFECOM surveyed 22,400 law enforcement, fire response, and emergency medical service (EMS) agencies nationwide. Known as the National Interoperability Baseline Survey, this landmark assessment had a response rate of 30 percent with participation nearly evenly split between law enforcement and fire response/EMS.

The survey was the first interoperability assessment derived from a comprehensive definition of interoperability designed in partnership with the emergency response community and founded on the SAFECOM Interoperability Continuum. This definition recognizes the importance of governance, standard operating procedures, technology, training and exercises, and usage. Survey questions assessed randomly selected agencies’ stages of development in each of these five areas.

Due out later this fall, the Baseline Survey findings will help emergency response leaders and policymakers make informed decisions about strategies for improving interoperability. With a clear representation of national capacities and vulnerabilities, the emergency response community and policymakers will be able to better plan for and identify next steps and milestones.